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temperatures greater than 200°C to form a passivation layer on the Al/Cu metal line surface.

REMARKS

The Official Action and cited references have been carefully reviewed. The review indicates that the claims, especially as amended, recite patentable subject matter and should be allowed. Reconsideration and allowance are therefore respectfully requested.

Before addressing the grounds upon which the claims have been rejected, a brief summarization of the improved metal etch tool for removing post-RIE polymer rails from Al/Cu metal lines of a semiconductor structure of the invention will be provided to establish a clearer line of distinction between the integrated metal etch tool comprising separate chamber means of the invention, compared to the structures disclosed in the cited and applied references.

In the art of making semiconductor structures in which removal of post-RIE polymer rails that are formed on a Al/Cu metal line, applicants are the first to invent separate chamber means interfaceable with said process in the form of an integrated metal etch tool that permits removing the sidewall polymers left behind after the metal (Al/Cu) RIE process. The separate chamber of the interfaced metal etch tool performs the chemistry (either post resist strip or prior to resist strip), thereby allowing a final rinse step of only using deionized water as a rinse.

Claims 13-17 were rejected as being anticipated by Chen et al. under 35 USC 102(b).

Applicants respectfully traverse the rejection and request reconsideration for reasons hereinafter elaborated.

Chen et al. disclose a schematic view in vertical cross-section of a vacuum chamber for practicing a passivating process that passivates etchant byproducts on a substrate so that the substrate exhibits no post-etch corrosion for an extended time. Optionally, the process also strips the polymeric remnant resist remaining on the substrate; however, as stated in column 3, lines 17-19, the process only uses conventional processing equipment to passivate and strip the substrate.

That conventional processing equipment is clearly demonstrated in FIG. 2, and includes, as mentioned in the Office Action, a vacuum chamber 52, comprising a plasma generation zone and a vacuum zone (column 5, lines 51-52).

No where in the disclosure of Chen et al. is there any reference to or mention of, an integrated metal etch tool comprising separate chamber means for providing a water-only plasma process to strip the photoresist layer of a semiconductor composite that has been subjected to a RIE process. Neither is there a separate chamber means for supplying a mixture of an etching gas and an acid neutralizing gas into the vacuum chamber in which the structure is supported to form a water soluble material of sidewall polymer rails left behind on a Al/Cu metal line from a RIE process.

Finally, the apparatus disclosed in FIG. 2 of Chen et al. clearly makes no reference to or mention of, any means for forming a water-only plasma process that permits removal of water-soluble materials with deionized water.

Accordingly, for the foregoing reasons, the apparatus disclosed in Chen et al. fails to anticipate applicants' claims as presently amended.

Withdrawal of the rejection is respectfully requested.

Claims 13-17 were rejected as being anticipated by Davis et al, under 35 USC 102 (b).

Applicants respectfully traverse this rejection and request reconsideration for the reasons hereinafter provided.

A careful review of Davis et al. reveals that it disclose apparatus for manufacturing integrating circuits. The apparatus essentially transfers work pieces and comprises:

- (a) a vacuum carrier having a sealable carrier door and capable of maintaining a vacuum with the workpieces therein, the carrier door movable between an open and close position;
- (b) a chamber adapted to receive the carrier and selective move and carrier door and having a closeable port; the chamber capable of maintaining an applied vacuum;
- (c) a moveable arm located within the chamber and capable of engaging the workpieces, the arm moveable into the carrier and through the port to transfer the workpieces;
- (d) a transfer mechanism located exterior to the chamber and adapted to transfer the workpieces from the arm to a non-vacuum processing station; and
- (e) a control system selectively applying vacuum and ambient pressure to the chamber.

Even though Davis et al. teaches a multi-chamber apparatus, that apparatus is exclusively directed to transferring work pieces. No where in the teachings of Davis et al. is there any reference to or mention of, an integrated metal etch tool comprising separate chamber means for providing a water-only plasma process to strip the photoresist layer of a semiconductor composite that has been subjected to a RIE process. Indeed, no RIE processes are present at all in Davis et al. - it therefore follows with greater emphasis that the

apparatus of Davis et al. does not provide RIE processing, let alone, separate chamber means interchangeable with such a process in the form of an integrated metal etch tool that permits removing the sidewall polymers left behind after the (Al/Cu) RIE process.

Thus, the apparatus of Davis et al. could not possibly anticipate applicants' claims as presently revised.

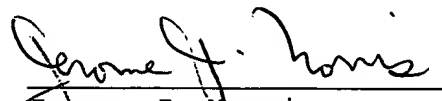
Withdrawal of the rejection is respectfully requested.

Note is taken of the objections raised to the claims on the grounds of informalities and the rejections raised under the second paragraph of 35 USC 112; however, in view of the amendments to the claims, these objections and rejections are no longer applicable.

Note is also taken of the objection to the specification on the basis of the existing abstract; however, in view of the revised abstract, the objection is no longer applicable.

In view of the foregoing amendments, remarks and arguments, it is believed that the application is now in condition for allowance, and early notification of the same is earnestly solicited.

Respectfully submitted,


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